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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/072,784	05/06/1998	BARIN GEOFFRY HASKELL		6905

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EXAMINER	
CHEN, WENPENG	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/072,784	HASKELL ET AL.	
	Examiner	Art Unit	
	Wenpeng Chen	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29,30,34,35 and 39-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-30, 34-35, 39-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/23/2004 and 9/1/2004 has been entered.

Examiner's responses to Applicant's remark

2. Applicants' arguments filed on 8/23/2004 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited references to reasonably and properly meet the claimed limitations.

3. Applicants' argument -- (1) Examiner used N1277 to interpret the term "priority." Applicants traverse the Examiner's interpretation and therefore also the rejection to Claim 29, because Suzuki's invention is to introduce a size/time scalability that was specifically different from the previously proposed scalability to N1277. Applicants cited column 7, lines 3-11 of Suzuki to support their point. Specifically, according to Suzuki, the size/time scalability "has not yet been proposed" to the standard body or in N1277. (2) The MPEG4 VM cited in column 30,

lines 62-63 of Suzuki may not be necessary that disclosed in N1277, because MPEG4 VM has several versions.

Examiner's responses -- The Examiner remains Applicants that reference to N1277 was only for the purpose of explaining "priority." Suzuki has taught the recited "priority" because a upper layer cannot be decoded alone and used to reconstruct the original image. A flag indicating a lower layer or a upper layer thus carry priority information. Without more specific definition of "priority" recited in the claim, The Examiner concludes that Suzuki indeed teaches the "priority" limitation under the argument.

With regard to point (1), the Examiner cites the paragraph (with highlight added) including column 7, lines 3-11 of Suzuki below for facilitating discussion.

"Therefore, the synthesized picture F3 is made up of the pictures F1 and F2. In a similar manner, any picture may be thought of as being made up of plural pictures or objects. If units that go to make up a picture are termed video objects (VOs), an operation for standardizing a VO based encoding system is underway in ISO-IEC/JTC1/SC29/WG11 as MPEG 4. However, at present, a method for efficiently encoding a VO or encoding key signals has not yet been established and is in a pending state. **In any event, although MPEG 4 prescribes the function of scalability, there has not been proposed a specified technique for realization of scalability for a VO in which the position and size thereof change with time.** As an example, if the VO is a person approaching from a distant place, the position and the size of the VO change with time. Therefore, if a picture of a lower layer is used as a reference picture in predictive encoding of the upper layer picture, it may be necessary to clarify the relative position between the picture of the upper layer and the lower layer picture used as a reference picture. On the other hand, in using VO-based scalability, the condition for a skip macro-block of the lower layer is not necessarily directly applicable to that for a skip macro-block of the lower layer."

This is the last paragraph of the background section, pointing out the needed improvement of the known MPEG4. Suzuki improved MPEG 4 by extending **from scalability for a VO without considering of position and size changes of VO to the scalability for a VO in which the position and size thereof change with time.** ***It is not a size/time scalability.***

According to column 27, lines 49-56 and column 30, lines 44-47, the picture re-constitution unit 73 of Fig. 27 reconstructs the lower layer image data to the same size of the original image. There is no selection of size for the reconstructed image; therefore no size scalability. This is also evident from the Examiner's previously cited passages. To further support this point, please see column 30, lines 44-48 and Figs. 15-21. When one compares Figs. 20-21 of Suzuki with Fig. 3.7.4 of N1277, one can see clearly that they have same scalability -- scalability of image quality, at least low quality image data represented by one base layer and high quality image represented by combination of the base layer (lower layer) and enhancement layer (upper layer).

Suzuki does not teach a size/time one-bit scalability flag as discussed above. The flag is an image quality scalability flag. The flag is used to select image quality, not size of the reconstructed image.

With regard to point (2), the Examiner likes to point out that the essential parts of bitstream syntax shown in section 4 of N1277 is the same as those of Suzuki shown in Figs. 33-37. Especially the scalability of Fig. 35 of Suzuki represents the same meaning of the scalability of page 53 of N1277; both are used to indicate a base-layer data or an enhancement-layer data.

In paper #32, the Examiner cited ISO/IEC JTC1/SC29/WG11 N1277 to further explain that the flag carries priority information. First N1277 is mentioned directly in Suzuki in column 7, lines 1-5 and indirectly through MPEG4VM in column 30, lines 62-63. MPEP 2131.01 states that extra references or other evidence can be used to show meaning of a term used in the primary reference, namely the flag of Suzuki carries priority information. *As shown in ISO/IEC JTC1/SC29/WG11 N1277, pages 45-50, the base layer that is the lower layer has the high*

priority because in the decoding process merely data of an enhancement layer cannot be used to generate any meaningful image. This citation of pages 45-50 of N1277 makes how the flag of Suzuki carries priority information more transparent.

4. Applicants' argument -- The Applicants argued to overcome the rejections of Claims 29-30, 34, 39-41, 43-44, 34-35, and 39-44, under section 103 based on the arguments given to Claim 29 summarized above.

Examiner's response -- See the above Examiner's responses. The Applicants' arguments are not persuasive.

5. Applicants' argument -- With regard to rejections of Claims 34-35 and 39-44 based on the combination of Suzuki and ISO/IEC N1993. (1) The combination is lack of motivation. (2) Furthermore, N1993 mirrors the approach of N1277 with regard to scalability. The above arguments referring to N1277 also applied to N1993.

Examiner's response -- With regard to point (1), the Examiner maintains his response and conclusion provided in the previous Office action, because Applicants only referred to the arguments previously presented. With regard to point (2), the above responses with respect to N1277 also applied here.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (US patent 6,097,842 cited previously.)

For Claim 29, Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

-- identifying a video object (VO) from a video data; (Fig. 32)

-- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)

-- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)

-- assigning priorities to video object layers (VOL); (*column 30, lines 62-63; column 31, lines 42-46; The one-bit flag for scalability is assigned to each layer as lower layer or upper layer. When there are only two VOLs, the flag carries priority information. The cited passages are related to MPEG4VM which is Exhibit D, ISO/IEC JTC1/SC29/WG11 N1277 attached to the Applicants Declaration received 2/24/2003, paper #26. As shown in ISO/IEC JTC1/SC29/WG11 N1277, pages 45-50, the base layer that is the lower layer has the high priority because in the*

decoding process merely data of an enhancement layer cannot be used to generate any meaningful image.)

-- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of ISO/IEC JTC1/SC29/WG11 N1993 publication ("Coding of Moving Pictures and Audio," ISO/IEC JTC1/SC29/WG11 N1993, San Jose, February 1998; hereafter referred as ISO/IEC N1993 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

-- identifying a video object (VO) from a video data; (Fig. 32)

-- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)

-- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)

-- transmitting each VOL by: (1) transmitting an identifier of the VOL and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

However, Suzuki does not teach the identifier recited in Claim 30.

ISO/IEC N1993 teaches an identifier including:

-- a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (pages 3 and 13; The "is_visual_object_identifier" is the flag.)

-- a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (pages 3 and 13; The "video_object_layer_priority" is the field.)

It is desirable to have more flexibility in adjusting scalability with including object base scalability. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Suzuki's VOL syntax shown in Fig. 35 with Table 7.2.4 of ISO/IEC N1993 to include the above flag and filed in the identifier, because the combination provides more flexibility in scalability. The combination thus transmits an identifier of the VOL's priority.

10. Claims 34, 39-41, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of Chang et al. (US patent 6,025,877 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

-- identifying a video object (VO) from a video data; (Fig. 32)

-- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)

-- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)

-- assigning priorities to video object layers (VOL); (*column 30, lines 62-63; column 31, lines 42-46; The one-bit flag for scalability is assigned to each layer as lower layer or upper layer. When there are only two VOLs, the flag carries priority information. The cited passages are related to MPEG4VM which is Exhibit D, ISO/IEC JTC1/SC29/WG11 N1277 attached to the Applicants Declaration received 2/24/2003, paper #26. As shown in ISO/IEC JTC1/SC29/WG11 N1277, pages 45-50, the base layer that is the lower layer has the high priority because in the decoding process merely data of an enhancement layer cannot be used to generate any meaningful image.*)

-- adding priority data for each video object layer to the video streams; (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

-- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

However, Suzuki does not teach the transmitting step recited in Claims 34 and 39.

Chang teaches a method of encoding a video data stream comprising the steps of:

-- assigning a priority to VOL data for the case there is only one single VOL of each video object; (Fig. 2, element 21; column 3, lines 10-26)

-- wherein information related to the single VOL data having a high priority is transmitted before information related to VOL data having a low priority; (column 3, lines 57-67)

-- (a) the priority data identifies which VOL layer may be discarded in the event of (a1) limited memory or processor resources, (a2) channel errors and (b) determining whether transmission conditions permit transmission of all VOLs of the video object; (column 3, lines 32-40, 58-64; Fig. 5; Fig. 5 teaches to transmit parts of information according to the priority and according to various conditions. A low current transmission speed is an indicator of channel congestion that causes channel error. The transmission speed in a network assigned to the system is varied. When the speed is reduced, the channel bandwidth is lost. It is also representing a limitation to the overall process resource of the receiving part.)

- if, not, discarding a lowest priority VOL and transmitting remaining VOL data. (As shown in Fig. 5, Chang teaches a case that the (TxSetSize + ObjSize(lowest priority)) becomes larger than egs. In that case the lowest priority VOL is discarded.)

It is desirable to maintain high quality of video services of various transmission speeds. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chang's teaching to transmit Suzuki's VOLs and priority data to a decoder according to the assigned the identification of base layer or enhancement layer (that represents priority of each

VOL in cases of two VOLs) of Suzuki, because the combination provides scalable transmission to minimize the effect variable transmission speed for optimizing the quality of transmitted data.

For Claim 44, both Suzuki and Chang teach a method of decoding encoded video data stream generated in their respective coding method. (Fig. 2 of Chang; Fig. 27 of Suzuki) As discussed above, the priority data identifies which VOL layer may be discarded in the event of limited memory or processor resources in the coding process, the combination also meets the limitation of the method of decoding recited in Claim 44.

11. Claims 34-35 and 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of ISO/IEC N1993 cited above and Chang et al. (US patent 6,025,877 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

-- identifying a video object (VO) from a video data; (Fig. 32)

-- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)

-- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)

-- transmitting each VOL by: (1) transmitting an identifier of the VOL and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

However, Suzuki does not teach the identifier interpreted as that recited in Claim 35.

ISO/IEC N1993 teaches:

-- adding priority data for each video object layer to the video streams; (pages 3 and 13)

-- an identifier including a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (pages 3 and 13; The "is_visual_object_identifier" is the flag.)

- wherein the indication of the priority of the VOL is optional; (The one-bit "is_visual_object_identifier" flag indicates whether priority is set or not.)

-- an identifier including a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (pages 3 and 13; The "video_object_layer_priority" is the field.)

It is desirable to have more flexibility in adjusting scalability with a method including object base scalability. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Suzuki's VOL syntax shown in Fig. 35 with Table 7.2.4 of ISO/IEC N1993 to include the above flag and filed in the identifier, because the combination provides more flexibility in scalability. The combination thus transmits an identifier of the VOL's priority.

However, the combination of Suzuki and ISO/IEC N1993 does not teach the transmitting step recited in Claims 34 and 39.

Chang teaches a method of encoding a video data stream comprising the steps of:

-- assigning a priority to VOL data for the case there is only one single VOL of each video object; (Fig. 2, element 21; column 3, lines 10-26)

-- wherein information related to the single VOL data having a high priority is transmitted before information related to VOL data having a low priority; (column 3, lines 57-67)

-- (a) the priority data identifies which VOL layer may be discarded in the event of (a1) limited memory or processor resources, (a2) channel errors and (b) determining whether transmission conditions permit transmission of all VOLs of the video object; (column 3, lines 32-40, 58-64; Fig. 5; Fig. 5 teaches to transmit parts of information according to the priority and according to various conditions. A low current transmission speed is an indicator of channel congestion that causes channel error. The transmission speed in a network assigned to the system is varied. When the speed is reduced, the channel bandwidth is lost. It is also representing a limitation to the overall process resource of the receiving part.)

- if, not, discarding a lowest priority VOL and transmitting remaining VOL data. (As shown in Fig. 5, Chang teaches a case that the (TxSetSize + ObjSize(lowest priority)) becomes larger than egs. In that case the lowest priority VOL is discarded.)

It is desirable to maintain high quality of video services of various transmission speeds. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chang's teaching to transmit VOLs and priority data taught by the combination of Suzuki and ISO/IEC N1993 to a decoder according to the assigned priority associated with the identifier because the combination provides scalable transmission to minimize the effect variable transmission speed for optimizing the quality of transmitted data.

For Claim 44, both Suzuki and Chang teach a method of decoding encoded video data stream generated in their respective coding method. (Fig. 2 of Chang; Fig. 27 of Suzuki) As

discussed above, the priority data identifies which VOL layer may be discarded in the event of limited memory or processor resources in the coding process, the overall combination also meets the limitation of the method of decoding recited in Claim 44.

Conclusion

12. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen
Examiner
Art Unit 2624

November 19, 2004